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More Milk From Less Feed

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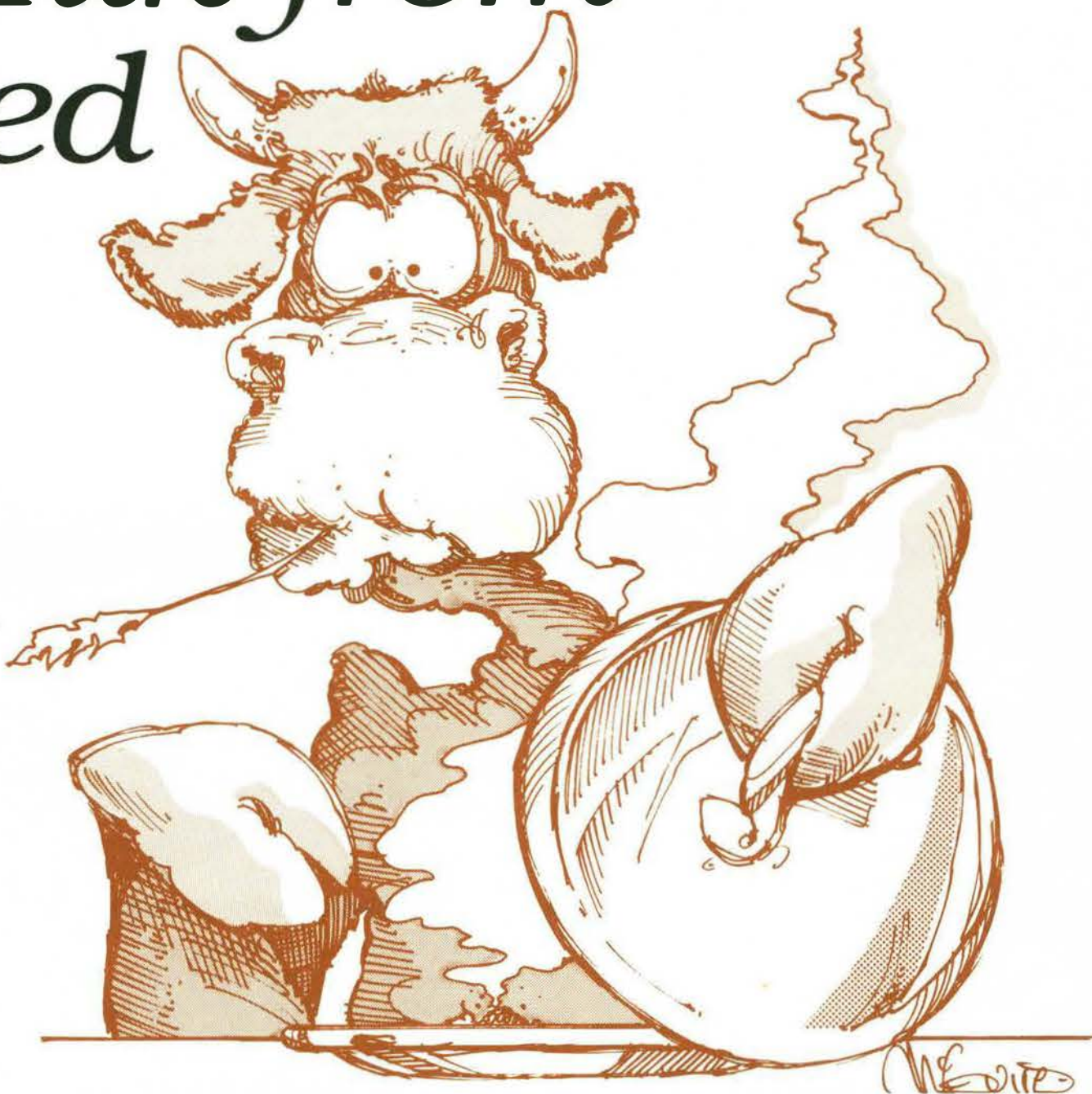
More Milk from less feed

The livestock industry, like other businesses, has experienced a great rise in costs in recent years. "The largest expense item for a dairyman is the cost of feed for his herd," said David T. Galligan, V.M.D., resident in clinical nutrition at New Bolton Center, and the field representative for the nutritional service. This service, begun in December 1982 by the Section of Nutrition, Department of Clinical Studies at New Bolton Center, University of Pennsylvania, utilizes nutritional science to tailor feed rations at livestock farms served by the NBC field service and by referring veterinarians.

Gone are the days when the dairyman could raise all the feed needed for a highly productive herd. Today herds are larger and individual cows produce more milk. Cattle are not out on pasture but are fed a mixture of different foods, including grain. According to Dr. Galligan, approximately eighty percent of the dairy farmers' expenses are for feedstuffs.

"Our service tries to improve the efficiency of feeding," he said. "Other objectives are to improve reproductive efficiency and to reduce disease incidence." Since the inception of the service, Dr. Galligan has formulated feeding programs for about seventy farms. He visits not only dairy farms but also horse farms and other livestock establishments.

Cattle eat a mixed diet. They are fed forages, such as hay, grass and silage, and grain-based concentrates. Many dairymen raise a large portion of the forage needed, but most purchase the concentrate. This diet of forage and grain provides the dairy cow with food energy and essential



nutrients, such as protein, vitamins, and minerals, needed to keep in bountiful health and to produce abundant milk.

Each ingredient in the forage has a different nutritional content. "When developing a feeding program for a herd, we try to optimize the combination of these feeds to enhance milk production and to minimize costs," said Dr. Galligan. "It is cheaper for the farmer to use as much forage as possible, but there is a fine balance. We must watch the composition and make sure that the diet contains all the required nutrients. Our guidelines are based on standards established by the National Research Council, modified by our research at NBC and experiences on farms."

Clients usually are referred by veterinarians or the School's field service. The nutrition service visits the farm, and Dr. Galligan discusses the

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current feeding practices and management with the farmer. He takes a herd health history and determines incidences of diseases, such as milk-fever. "This can be prevented by proper nutrition," he said. "It can be an expensive problem. Not only is production lost but the cow may develop secondary problems." By adjusting the diet prior to calving this disease can be prevented.

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MORE MILK FROM LESS FEED

(continued from cover)

Dr. Galligan collects samples of the forage and makes a record of the quantities and costs of all the feed used. The forage samples are sent to a laboratory for analysis of nutritional content. That information is compared to the NRC standards, and a feeding formula is developed.

The formula will vary, depending on the stage of the cow's lactation cycle. Milk production peaks one or two months after calving and slowly tapers off. Cows are bred annually and a few weeks prior to calving are put in a dry lot as they no longer produce milk. At each stage of this annual cycle the nutritional requirements are different. A cow at peak performance level needs a great deal more food energy and protein than a cow in the dry lot.

All of this is calculated, and a ration is formulated taking into account the forage on hand as well as the grain available for purchase and the costs. Feed varies from region to region. For instance, cattle in the south receive a lot of their protein from cottonseed, a feedstuff not readily available in the northeast. Also, the content of forage varies from harvest to harvest. This means that each new batch has to be analyzed for nutritional content to obtain the most beneficial and cost effective formula. Usually Dr. Galligan visits a farm four times a year to take forage samples.

He explained that on the average the nutrition service has been able to reduce feed costs at dairy farms by about fifteen to twenty percent. He cited a forty head herd where he was able to reduce the costs by 79 cents per cow per day. This amounted to a nineteen percent saving in the feed bill. But the benefits go further, milk production has increased by as much as thirteen percent. The savings are even more dramatic for a large herd. He told of a 500-head herd where the annual savings in feed costs and the money realized from increased production amount to about \$70,000. "The nutrition service provides a huge return in savings for the amount expended for consultation and laboratory fees," he said.

Improved productive efficiency on dairy farms following re-formulation of feeding programs has appeared in general to be associated with improved reproductive efficiency and reduced disease incidence.

Improved productive efficiency on dairy farms following re-formulation of feeding programs has in general appeared to be associated with improved reproductive efficiency and reduced disease incidence. More rigorous documentation of these responses is being made through the combined efforts of the NBC nutrition service and field service.

The nutrition service is also utilized by horse breeders. "It is harder to measure the impact here," he said. "We can look at weanling weights, evaluate problems in growing stock, but all this

cannot be as easily measured as milk production in cattle." He also consults with farmers who raise pigs, though such farms are usually served well by feed companies. He mentioned one case where farrowing sows, shortly after giving birth, would break legs. "We analyzed the feed and found it deficient in calcium and phosphorus," he said. "The ration was adjusted and the problem solved."

Dr. Galligan sees nutrition and nutrition services as an exciting, expanding field of veterinary medicine. "Already an number of practitioners are interested in it and are doing nutritional counseling," he stated. "There are two groups of veterinarians who have access to our computer and develop formulas for clients. We hope to expand this service." He also hopes that, in the near future, the School will set up a laboratory for analyzing feedstuffs rather than having to use an independent laboratory. "We need to reduce turnaround time, from the time the samples are collected to giving the new formula to the farmer," he explained.

"Our service is able to provide the most up-to-date information. We are continually searching for innovative feeding programs which will deliver the most beneficial amount of nutrition for the least cost."

He also pointed out that, while he is working in the field, research continues at the School. "Our service is able to provide the most up-to-date information. We are continually searching for innovative feeding programs which will deliver the most beneficial amount of nutrition for the least cost." If there are special problems pertaining to nutrition, the service has the backup of the entire department, its specialists, and researchers.

The nutrition service has made the difference between overall profit or loss on several farms. Costs to farmers have been moderate and may need to be raised to sustain our efforts. Returns to farmers on their costs for the NBC nutritional service have been outstanding—twenty to fifty dollars for every dollar spent. One reason, according to Dr. Galligan, "We are not selling commercial products. We formulate feed commodities specifically for the individual herd."

The program has been received enthusiastically, and a second field representative will join the staff shortly.

The nutrition service is also available for consultation for dog breeders and large kennels. For additional information and referral procedures, please call (215) 444-5800, extension 306.

We Forgot

The story "Links to Penn" appearing in Bellwether 8 was contributed by Dr. Martin M. Kaplan (V'40). We apologize for omitting this information.



Judy Smith